

Applicants: Reininger et al.
Preliminary Amendment
Amdt. dated December 1, 2004

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A position sensor designed in the form of a Hall sensor, comprising an elongated circuit substrate (32) designed as a molded interconnect device (MID), which includes an elongated support element (34) consisting of injection molded plastic material and having at a front end side (37) thereof a support face (36) which is so fitted with a sensor element (26) including a Hall plate (27) or constituted by a Hall plate (27) that the plane (29) of the Hall plate (27) extends at a right angle to the longitudinal axis (33) of the circuit substrate (32), the sensor element (26) being electrically contacted by means of printed wiring (35) constituted by a structured metal layer applied to the support element (34).

2. (Currently Amended) The position sensor as set forth in claim 1, further comprising characterized in that an electrical lead (38) extends extending from the rear side, opposite to the front end side (37), of the circuit substrate (32), electrical conductors (42) of the lead being contacted by printed wiring (35) of the circuit substrate (32).

3. (Currently Amended) The position sensor as set forth in claim 2, wherein characterized that the printed wiring (35) extends on its path between the sensor element (26) and the electrical conductors (42) of the lead (38) at least partially at the bottom side of the support element (34).

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4. (Currently Amended) The position sensor as set forth in claim 1, wherein any one of the claims 1 through 3, characterized in that the printed wiring (35) extends at least partially in recesses (44) in the support element (34) and is covered in a hermetically sealing fashion by filler material applied to the recess (44).

5. (Currently Amended) The position sensor as set forth in claim 1, wherein any one of the claims 1 through 4, characterized in that the support element (34) is fitted with electronic components (43) on the printed wiring (35).

6. (Currently Amended) The position sensor as set forth in claim 1, wherein any one of the claims 1 through 5, characterized in that the sensor element (26) and the printed wiring (35) and furthermore any electronic components (43) provided on the support element are encapsulated in a casing body (46) of plastic material, which is molded in position by injection molding on the support element (34).

7. (Currently Amended) The position sensor as set forth in claim 6, wherein characterized in that the material of the casing body (46) is transparent to light so that optical signals of encapsulated optical display means (43) may emerge.

8. (Currently Amended) The position sensor as set forth in claim 1, wherein claims 1 through 7, characterized in that the support face (36) for the sensor element (26) is oriented in the longitudinal direction (33) of the circuit substrate (32), a normal to its face being ~~more especially~~ co-directional with the longitudinal axis (33) of the circuit substrate (32).

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9. (Currently Amended) The position sensor as set forth in claim 8, wherein characterized in that the support face (36) is provided directly on the front end side of the support element (34).

10. (Currently Amended) The position sensor as set forth in claim 1, wherein any one of the claims 1 through 9, characterized in that the front end region of the support element (34) is constituted by a T-like support section (47) which, together with a connecting neck (48) extending in the longitudinal direction in the middle and with an adjoining transversely extending support board (49), defines the support face (36).

11. (Currently Amended) The position sensor as set forth in claim 1, wherein any one of the claims 1 through 10, characterized in that the sensor element (26) is a Hall chip provided with an evaluating electronic system, as for example an ASIC, in addition to the Hall plate (27).

12. (Currently Amended) The position sensor as set forth in Claim 1 further comprising an attachment means provided any one of the claims 1 through 11, characterized in that between the front and the rear end region of the circuit substrate (32) an attachment means (55) is provided for releasable clamping attachment of the position sensor (7) in an attachment slot (8) in another component (2).

13. (Currently Amended) The position sensor as set forth in claim 12, wherein the characterized by a single attachment means (55) is placed on the circuit substrate (32) in the longitudinal middle thereof.

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14. (Currently Amended) The position sensor as set forth as set forth in Claim 1, ~~wherein the sensor any one of the claims 1 through 13, which~~ is designed to be placed during use in such a fashion in an attachment slot (8) in a component (2) that its longitudinal axis extends parallel to the longitudinal axis (17) of the attachment slot (8) and possesses attachment means (15) rendering possible a detachable clamping attachment in the attachment slot (8).

15. (Currently Amended) The position sensor as set forth in claim 1, wherein any one of the claims 1 through 14, characterized in that the circuit substrate (32) at least partially constitutes the sensor housing.

16. (Currently Amended) The position sensor as set forth in claim 1, further comprising any one of the claims 1 through 14, characterized by a further second Hall sensor element having a second (54) whose Hall plate (54) whose alignment is unlike that of the first Hall plate (27) of the other first sensor element (26).